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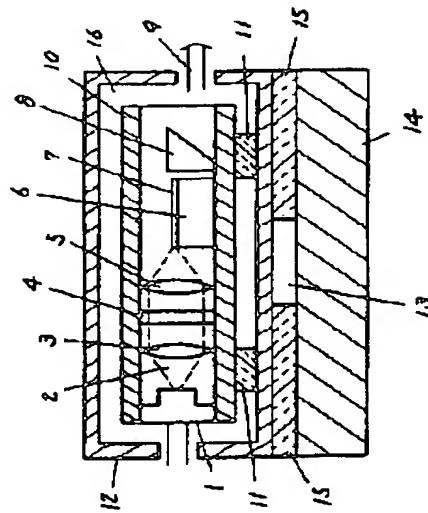
APPLICATION DATE : 26-09-90
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APPLICANT : MATSUSHITA ELECTRIC IND CO LTD;

INVENTOR : SASAI YOICHI;

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TITLE : SHORT WAVELENGTH LASER BEAM
 SOURCE AND PRODUCTION
 THEREOF



ABSTRACT : PURPOSE: To decrease the fluctuations in output arising from a change in the environmental temp. of the short wavelength laser beam source by providing a Peltier thermoelectric element for executing the temp. control of a lens barrel.

CONSTITUTION: A semiconductor laser 1 which generates a laser beam 2 of $0.84\mu\text{m}$ wavelength, a collimating lens 3, a half wave plate 4, a focusing lens 5, an optical wavelength conversion element 6 formed with an optical waveguide 7 on, for example, an LiNbO_3 as a nonlinear optical crystal, a shaping lens 8 and the lens barrel 10 are provided. Further, a spacer 11 formed by using a heat insulating material is provided between the lens barrel 10 and a case 12 in the bottom of the lens barrel 10 and the Peltier thermoelectric element 13 is provided in contact with the base of the case 12. The temps. of the optical wavelength conversion element 6, the laser beam source 1 and the lens 5 are kept constant and the optical at is misalignment and the fluctuation in the output of the laser beam source 1 by the change of the environmental temp. are decreased. The output of the short wavelength laser beam source is stabilized.

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